

1 In the Claims

2 Claim 33 has been amended.

3 Claims 1-16, 32, and 42 were previously canceled without prejudice.

4 Claims 17-31, 33-41 and 43-59 remain in the application and are listed
5 below:

6

7 1.-16 (Canceled).

8

9 17. (Previously Presented) A computing device comprising:

10 a computer-readable medium;

11 a location service module embodied on the computer-readable medium; and
12 multiple different location providers configured to receive information from
13 one or more different sources of information and process the information to
14 provide location information to the location service module,

15 the location service module being configured to process the location
16 information to provide a current device location; and

17 a hierarchical tree structure that resides on the computer-readable medium,
18 the hierarchical tree structure comprising multiple nodes that are each assigned a
19 unique identification, the nodes representing geographical divisions of the Earth,
20 the location service module being configured to traverse at least some of the nodes
21 to provide the current device location.

22

23 18. (Original) The computing device of claim 17 embodied as a mobile
24 computing device.

1 19. (Original) The computing device of claim 17 embodied as a desktop
2 computing device.

3
4 20. (Original) The computing device of claim 17, wherein one or more
5 of the location providers are configured to self-monitor their operation and to
6 inform the location service module of an operation irregularity.

7
8 21. (Original) The computing device of claim 17, wherein one or more
9 of the location providers are configured to assign confidence parameters to the
10 information that is provided to the location service module, the confidence
11 parameters providing a measure of a provider's confidence in the information.

12
13 22. (Original) The computing device of claim 17, wherein one or more
14 of the location providers are configured to assign accuracy parameters to the
15 information that is provided to the location service module, the accuracy
16 parameters providing a measure of the accuracy of a provider's information.

17
18 23. (Original) The computing device of claim 17, wherein one or more
19 of the location providers are configured to:

20 assign confidence parameters to the information that is provided to the
21 location service module, the confidence parameters providing a measure of a
22 provider's confidence in the information; and

23 assign accuracy parameters to the information that is provided to the
24 location service module, the accuracy parameters providing a measure of the
25 accuracy of a provider's information.

1
2 24. (Original) The computing device of claim 17, wherein one or more
3 of the location providers are configured to continuously update information that is
4 provided to the location service module.

5
6 25. (Original) The computing device of claim 17, wherein one or more
7 of the location providers are configured to periodically update information that is
8 provided to the location service module.

9
10 26. (Original) The computing device of claim 25, wherein the one or
11 more location providers are configured to update the information at specified
12 times.

13
14 27. (Original) The computing device of claim 25, wherein the one or
15 more location providers are configured to update the information on the
16 occurrence of specified events.

17
18 28. (Original) The computing device of claim 17, wherein one or more
19 of the location providers are configured to receive a request from the location
20 service module and update the information that is provided to the location service
21 module based on the request.

22
23 29. (Original) The computing device of claim 17, wherein the
24 computing device comprises a hand-held mobile computing device.

1 30. (Original) The computing device of claim 17, wherein the
2 computing device is configured to accommodate dynamically adding or removing
3 one or more location providers.

4

5 31. (Original) The computing device of claim 17, wherein the
6 computing device is configured to continue operation when one or more of the
7 location providers stops functioning.

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9 32. (Canceled).

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11 33. (Currently Amended) The computing device of claim 32 17, wherein
12 one or more of the location providers are configured to process the information
13 and provide the unique identification for one of the nodes of the hierarchical tree
14 structure.

15

16 34. (Previously Presented) A method of determining the location of a
17 computing device comprising:

18 providing multiple location providers that are configured to provide
19 location information that pertains to a current location of the computing device;

20 receiving location information from the multiple location providers using a
21 common interface;

22 using the information that is received from the multiple location providers
23 to ascertain a current device location by using a hierarchical tree structure
24 comprising multiple nodes that are each assigned a unique identification, the nodes

1 representing geographical divisions of the Earth, said act of using comprising
2 traversing at least some of the nodes to provide the current device location.

3
4 35. (Original) The method of claim 34, wherein the common interface
5 accommodates multiple location providers that are different.

6
7 36. (Original) The method of claim 34, wherein the receiving of the
8 location information comprises continuously receiving location information from
9 at least one of the location providers.

10
11 37. (Original) The method of claim 34, wherein the receiving of the
12 location information comprises periodically receiving location information from at
13 least one of the location providers.

14
15 38. (Original) The method of claim 37, wherein the receiving of the
16 information comprises receiving the information at specific times.

17
18 39. (Original) The method of claim 37, wherein the receiving of the
19 information comprises receiving the information on the occurrence of specific
20 events.

21
22 40. (Original) The method of claim 37, wherein the receiving of the
23 information comprises receiving the information responsive to a request to receive
24 the information.

1 41. (Previously Presented) One or more computer-readable media
2 having computer-readable instructions thereon which, when executed by a hand-
3 held mobile computing device, cause the hand-held mobile computing device to:
4 provide multiple different location providers that are configured to provide
5 location information that pertains to a current location of the computing device;
6 receive location information from the multiple different location providers
7 using a common interface; and
8 use the information that is received from the multiple location providers to
9 ascertain a current device location by traversing a hierarchical tree structure
10 comprising multiple nodes that represent physical or logical entities in order to
11 ascertain the current device location.

12
13 42. (Canceled).
14
15 43. (Previously Presented) A method of determining the location of a
16 mobile computing device comprising:
17 providing multiple different location providers that are configured to
18 provide location information that pertains to a current location of the computing
19 device;
20 monitoring one or more of the location providers;
21 assigning a confidence parameter to location information that is provided
22 by one or more providers, the confidence parameter providing a measure of a
23 provider's confidence in its location information;
24 sending the location information and the confidence parameter to a location
25 service module on the mobile computing device, the location service module being

1 configured to use the location information and the confidence parameter to
2 ascertain a current device location;

3 wherein said location information is configured to be used by the location
4 service module in conjunction with a hierarchical tree structure that resides on a
5 computer-readable medium on the mobile computing device, to ascertain the
6 current device location, the hierarchical tree structure comprising multiple nodes
7 that are each assigned a unique identification, the nodes representing geographical
8 divisions of the Earth, the location service module being configured to traverse at
9 least some of the nodes to provide the current device location.

10
11 44. (Original) The method of claim 43 further comprising assigning an
12 accuracy parameter to the location information that is provided by one or more
13 providers, the accuracy parameter providing a measure of the accuracy of a
14 provider's location information.

15
16 45. (Original) The method of claim 43 further comprising responsive to
17 the monitoring, notifying the location service module upon the occurrence of an
18 operation irregularity.

19
20 46. (Original) The method of claim 43 further comprising receiving a
21 location query and responding to the query with a location provider.

22
23 47. (Original) The method of claim 43, wherein one or more of the
24 location providers are configured to continuously send the location information to
25 the location service module.

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2 48. (Original) The method of claim 43, wherein one or more of the
3 location providers are configured to periodically send the location information to
4 the location service module.

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6 49. (Original) The method of claim 48, wherein the one or more location
7 providers are configured to send the location information at specified times.

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9 50. (Original) The method of claim 48, wherein the one or more location
10 providers are configured to send the location information on the occurrence of
11 specified events.

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13 51. (Original) One or more computer-readable media having computer-
14 readable instructions thereon which, when executed by a mobile computing
15 device, implement the method of claim 43.

16
17 52. (Previously Presented) A method of determining the location of a
18 mobile computing device comprising:

19 providing multiple different location providers that are configured to
20 provide location information that pertains to a current location of the computing
21 device;

22 monitoring one or more of the location providers;

23 assigning an accuracy parameter to location information that is provided by
24 one or more providers, the accuracy parameter providing a measure of the
25 accuracy of a provider's location information;

1 sending the location information and accuracy parameter to a location
2 service module on the mobile computing device, the location service module being
3 configured to use the location information and the accuracy parameter to ascertain
4 a current device location;

5 wherein said location information is configured to be used by the location
6 service module in conjunction with a hierarchical tree structure that resides on a
7 computer-readable medium on the mobile computing device, to ascertain the
8 current device location, the hierarchical tree structure comprising multiple nodes
9 that are each assigned a unique identification, the nodes representing geographical
10 divisions of the Earth, the location service module being configured to traverse at
11 least some of the nodes to provide the current device location.

12
13 53. (Original) The method of claim 52 further comprising, responsive to
14 the monitoring, notifying the location service module on the occurrence of an
15 operation irregularity of a location provider.

16
17 54. (Original) The method of claim 52 further comprising receiving a
18 location query and responding to the location query with the location provider.

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20 55. (Original) The method of claim 52, wherein one or more of the
21 location providers continuously send location information to the location service
22 module.

1 56. (Original) The method of claim 52, wherein one or more of the
2 location providers periodically send location information to the location service
3 module.

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5 57. (Original) The method of claim 56, wherein the one or more location
6 providers send the location information at specified times.

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8 58. (Original) The method of claim 56, wherein the one or more location
9 providers send the location information on the occurrence of specified events.

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11 59. (Original) One or more computer-readable media having computer-
12 readable instructions thereon which, when executed by a mobile computing
13 device, implement the method of claim 52.

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